**Maintaining Homeostasis**

**Membranes**

**Have 2 basic parts and the major function of**

**Connections between cells like plasmodesmata in plants & gap junctions in animals**

**Phosphate Heads that are hydrophilic & attract water & other polar substances**

**Fatty Acid Tails that are hydrophobic & repel water & other polar substances**

**Phospholipids**

**Proteins**

**Enzymes, Cell Recognition, & Chemoreception**

**That are made of** **with functions** as

**Transmembrane Proteins that span the entire width of the lipid bilayer**

**Are NOT required for the process of** **Are required for the process of**

**Cotransport**

**Ion Pumps**

**Facilitated Diffusion**

**Simple Diffusion**

**Endocytosis**

**Exocytosis**

**Because the molecules being transported are**

**Hydrophilic, Ions or Water in the specific process called osmosis**

**Very small like O2 & CO2 or Hydrophobic like fats & steroids**

**Charged Ions & Hydrophilic substances**

**Ions**

**Very large or move in large quantities as they fuse with the membrane, forming a vesicle that brings the contents into the cell.**

**Very large or move in large quantities as a vesicle fuses with the membrane, expelling the vesicle contents outside the cell.**

**Which always requires ATP or other forms of cell energy**

**Are forms of active transport because the membrane must reconfigure its bilayer.**

**Which always requires ATP or other forms of cell energy**

**Which never requires ATP or other forms of cell energy**

**Are forms of active transport because substances move against their concentration gradients from low to high concentrations.**

**Are forms of passive transport because substances move down their concentration gradients from high to low concentrations.**